

La., Iowa, Minn., Ky., Ga. 7th, Ala., Dak., Ind., Nebr., Ohio, Va., Fla., Iowa, Minn., Ill., Ga., Mo., S. C., Tex., Wis. 8th, Ala., Conn., Ind., Kan., Md., Mass., Nebr., N. J., N. Y., Ohio, Pa., Tenn., Va., Wis., Dak., Montana, Ind. Ty., Fla., Minn., Mich., W. Va., Ill., Ky. 9th, Conn., Dak., Del., Kan., Me., Md., Mass., Nebr., N. J., N. Y., Pa., Va., Wis., R. I., Tex., Fla., Ala., Miss., Minn., Mich., Ill., Iowa. 10th, N. Y., Col., Conn., Dak., Iowa, Mass., Mich., N. J., Ohio, Pa., Vt., Va., Montana, Tex., Ala., W. Va., Md., Wy. Ty., Ill., Nebr. 11th, Ala., Col., Ill., Ind., Iowa, Mass., Ohio, Va., Wis., N. M., Dak., Tex., Minn., N. Y. 12th, Col., Del., Ind., Md., N. H., N. J., N. Y., Ohio, Pa., Va., Fla., N. M., Tex., Minn., Dak., Mich., W. Va., Wy. T., Ill., S. C. 13th, Col., Ind., Kan., Miss., Ohio, Va., Dak., Tex., W. Va., Ill., Ky., Fla., Ga., N. C. 14th, Col., Dak., Ia., Kan., Me., Mass., Nev., Tex., Minn., Wis., Mich., Tenn., Ga., S. C., Ill. 15th, Ill., Mass., Fla., Utah, Col., Tex., Dak., Minn., Wy. Ty., Ia. 16th, Dak., Va., Neb., Kan., Fla., Minn., Wis., Mich., Ia. 17th, N. Y., Ill., Ind., Kan., Me., Mich., Mo., N. H., Vt., Va., Wis., Fla., Ia. 18th, Dak., Ind., Mass., N. H., N. J., N. Y., Ohio, Pa., Va., Ill., Tex., Minn., Ia., Mich., Ky., Ga., Mo., Neb. 19th, Col., Ia., Md., N. J., N. C., Pa., Tenn., Va., Dak., N. M., Tex., Fla., W. Va., S. C., Mass., Ill., Mo., Neb. 20th, Col., Fla., Ill., Md., Neb., N. Y., Ohio, Tenn., Va., R. I., Ind., Wy. Ter., N. M., Ala., Ga., Ia. 21st, N. Y., Col., Conn., Kan., Me., Md., Mass., N. H., N. J., N. C., Pa., Tenn., Vt., Va., La., Ga., R. I., S. C., Tex. 22nd, Col., Dak., Miss., Va., Wy. Ter., Mont., Fla., Tex., S. C., Ga., Utah. 23rd, Col., Dak., Kan., Vt., Utah, Nev., Mont., Tex., Ala., La., Fla., N. H., Wy. Ter., Neb. 24th, Col., Kan., Fla., Mont., Tex., Wy. Ter., Ia. 25th, Col., Kan., N. H., Wis., Fla., Utah., Wy. Ter., Neb., Minn., Ia. 26th, Col., Ga., Ill., Ind., Mo., N. Y., Tenn., Ind. Ter., Tex., Ala., Fla., Ia., Ky., Utah. 27th, Col., Ga., N. C., Tenn., Va., N. M., Neb., Dak., Tex., Ala. 28th, Ga., Kan., Neb., N. C., Tenn., Va., Dak., Tex., Ala., Miss., La., Mo. 29th, Dak., Del., Ga., N. C., Ohio, Pa., Tenn., Va., Fla., Minn., W. Va., Ill., Md., N. J., Tex. 30th, Ala., Ind., Neb., N. J., Ohio, Va., Kan., Minn., Mo., Mich., Ga., Ill., Ia., S. C. 31st, Dak., Ill., Ind., Ia., Mich., N. J., Ohio, Va., Ala., Tex., W. Va., Ga., S. C., N. C., Md., Neb.

*Auroras*.—Clear Creek, Neb., 1st, 2nd, 3rd; Milwaukee, Wis., 15th; Flushing, N. Y., 25th; Vevay, Ind., 21st, 31st.

*Magnetic Phenomena*.—Prof. G. Hinrichs, Iowa City, Iowa, reports the average magnetic diurnal range in declination as 8.7 minutes.

*Telegraphic communication interfered with by Atmospheric Electricity*.—Santa Fe, 5th, 15th, 17th, 18th, 21st, 24th; 11th, severe thunder-storm, telegraphic instruments cut out; 12th, severe thunder-storm, lines worked with difficulty; 19th, 20th, 27th, severe thunder-storm, wires cut out. Concho, Tex., 13th, 14th, 26th. Griffin, Tex., 26th. Laredo, Tex., 25th. Boerne, Tex., 26th to 29th. Burlington, Iowa, 31st. Pembina, Dak., 6th, electricity intense, wires entirely unmanageable, "sparks from switch-board to lightning arrester two feet in length; 18th, instruments and wires completely unmanageable, continually emitting sparks, although cut out, lightning arrester fused; at Grand Forks wires were burned up; 25th, earth currents very strong, interfered with lines; 29th to 31st, electrical disturbance continued throughout entire days. Sandy Hook, N. J., 9th, 21st.

## OPTICAL PHENOMENA.

*Solar Eclipse*.—A summary of the observations of the Solar Eclipse of July 29th will appear in the REVIEW for August.

*Solar Halos*.—1st, Tex. 3rd, Ohio. 4th, Ohio, S. C. 5th, Ohio, Miss. 6th, Ala., R. I., Ind., Miss., Ohio. 7th, Ala., La., Ohio, Ga., Ind., Miss. 8th, Ohio, Neb. 9th, Ill., Pa. 10th, Ill. 11th, Ohio, Ill., N. H., N. Y. 12th, Ala., Ohio, Ga., N. H. 13th, Ga. 16th, Neb., N. Y., R. I., Conn., N. H. 19th, Ill., N. Y. 20th, Ohio, Fla., Ill., Ind. 21st, Dak. 22nd, Ohio. 23rd, Ill., Mo. 25th, Ohio, N. Y., R. I., Conn. 26th, Ga., Ohio. 27th, N. Y. 28th, Tex., S. C., Ill., Ind., Mich., N. Y., Ohio, Pa. 29th, Tex., S. C., N. Y., R. I., Conn., Mass., N. H., Me., Vt. 30th, Fla., Ohio, Wis. 31st, N. Y.

*Lunar Halos*.—3rd, Ind. 4th, Tex., Ind. 5th, Tex., N. Y., Ohio. 7th, Tex., La., Ohio. 7th, Tex., S. C., Dak. 8th, Tex., Iowa, Ga., Va., Ohio, Utah. 9th, Kan., Tex., Ala., Mo., Ky., Ohio. 10th, Col., Tex., La., Mo., Pa., Ky. 11th, Tex., La., Mo., Minn., Ohio, N. C. 12th, Cal., Tex., Fla., Mo., Ohio. 13th, Tex., Ga., Mo., Va. 14th, Minn., Mich. 15th, Dak., Iowa, Minn., Ohio. 16th, Mich., N. Y., N. J., Me., Tenn. 17th, Ga., N. C., Va. 18th, Ohio, Conn. 19th, N. Y., Ohio. 20th, Tex., Iowa.

*Mirage*.—New Haven, Conn., 31st, over Long Island Sound.

*Miscellaneous*.—On the 2nd, at Tybee Island, Ga., 5 p. m., "a double rainbow was observed in an apparently cloudless sky." 29th, at Louisville, Ky., "the following curious phenomenon was observed during the solar eclipse:—a bow, almost complete and somewhat similar to a rainbow, formed on the translucent clouds about 10° west of zenith, in the reverse position to that of a rainbow; had the circle been complete, the zenith would have been near the centre." Lieut-Commander Chas. H. Craven, U. S. Navy, observer at U. S. Navy Yard, Mare Island, Cal., reports as follows:—"June 7th—although the sky was completely overcast, the hills and all objects on them were completely visible. I could distinguish trees (single) at more than twenty miles, and see the chimneys and windows in houses over eighteen miles; even the posts and rails of fences could be counted at eight or ten miles to the eastward."

## MISCELLANEOUS PHENOMENA.

*BOTANICAL*.—*Alabama*—1st, in northern portion of state, wheat crop seriously cut off by rust; cotton generally good, and blooming well, some abandoned on account of successive rains; corn crops fine. These conditions also obtain in western Tennessee, northern Mississippi and northern Arkansas. *Canada*—11th,

Ontario, fall wheat crop large and excellent; spring wheat, good but less promising; oats and barley good; peas abundant; rye favorable; corn fine; hay crop large; potatoes, great crop, somewhat damaged by Colorado beetles; all fruits except apples rather short by severe June frosts. Quebec, fall wheat, small crop but good; spring crops suffered from late frosts and droughts; barley, peas and oats very good; potatoes injured by frosts, droughts and Colorado beetles, crop will probably be quite poor; hay crop in eastern part abundant; wheat reduced by local droughts; fruit crop uneven, injured in sections by frosts and insects. *California*—San Diego Co., winter wheat badly rusted, will not get more than half a crop; barley will do better, not a full crop. *Connecticut*—New London, blooming, 2nd, oleander; 20th, pussion flower; 22nd, cutting hay commenced. *Colorado*—Summit, 17th, peas up in garden; 20th, potatoes up; 25th, corn, beets and spinach growing well; 31st, radishes ripe. *Dakota*—Minnehaha Co., wheat harvest commenced, very little rust; oats very heavy and lodged some; flax splendid; barley good, cutting. Olivet, harvesting, 8th, barley, 15th, oats; 17th, field corn in tassel. Pembina, 15th, new potatoes and peas; 24th, wheat crop excellent, barley almost ripe, haying begun; 25th, harvesting barley. *Delaware*—1st, wheat crop throughout the state the largest ever harvested. *Florida*—Milton, 80th, corn ripe and harvested. Houston, corn crop good; cotton very promising. *Georgia*—Forsyth, 24th, crops maturing rapidly; season exceedingly favorable to vegetation. *Illinois*—Meredosia, 26th, wheat, corn and potatoes promise well; oats heavy; hay good. Virden, corn very spotted, but little good. Griggsville, winter wheat very heavy, all threshed; oats nearly all cut, yield good. Wheaton, corn growing amazingly; oats heading out very full. Metropolis, wheat only half a crop; oats good, all cut; corn equal to last year. Avon, no rust in wheat; oats heading out well; corn looks splendid. Atlanta, some rust in spring wheat; rye all cut; corn about the average. Prophetstown, oat crop very heavy; no rust in spring wheat, condition excellent; corn equal to last year. Wyoming, winter wheat of very superior quality; rye all cut, very large yield; some rust in spring wheat; corn in good condition. Riley, 8th, commenced haying; 15th, corn in tassel and silk; 22nd, wheat harvest begun. *Indiana*—Benton Co., wheat, very large crop; oats, best ever raised in this county; corn, prospect magnificent for very large crop; potatoes, prospect splendid; fruit crop good. Boone Co., corn, average crop; potatoes, fair; apples, half crop; no peaches. Cass Co., wheat crop very superior; oats, prospect for a very heavy yield; corn in excellent condition; fruit of all kinds abundant and promise well, except grapes, which were generally killed by frost. Clinton Co., oat crop immense; corn, fair; fruit, of all kinds, plentiful; apples and pears, big crop; no peaches or grapes; flax and hay in splendid condition. Greene Co., apples, scarcely an average crop; peaches in abundance, trees breaking down; plums, pears and smaller fruits never more abundant. Knox Co., wheat, decrease in yield, but increase in quality; oats, better than ever known before; corn, fair; potatoes, remarkably good; apples, not half a crop and rather poor; peaches, good, large yield; pears, small crop, trees largely killed by pear-blight, appearing as if struck by lightning. Madison Co., wheat, nearly double the yield of last year; oat crop, very large; corn crop, prospect never better; potatoes, fair; fruit, of all kinds, will yield a full crop, except peaches; there will be a large increase of flax. Monroe Co., oat crop, the best ever harvested; corn crop, good; potatoes, prospect flattering; apples, average crop; peaches, enormous yield, with trees breaking down, but fruit not so large as usual; all other fruits and berries plenty. Montgomery Co., corn crop promises an immense yield; peach crop, largest in five years; apples will be very abundant; grapes, not as good as last year; all small fruits in great abundance. Rush Co., oat crop greater than has been known for many years; corn, about the average; potatoes fair; not many peaches; an abundance of apples, pears and plums; grapes scarce, on account of June frosts. Tippecanoe Co., wheat crop the largest since 1864; oats fair; corn, magnificent prospect for large yield; potatoes, best crop known for several years; fruits fair, average crop. Wayne Co., fruit crop unusually heavy, except apples, which are falling badly; the crop of hemp and hay is unusually abundant. *Indian Territory*—Fort Gibson, 2nd, peaches ripe; 20th, water-melons in market. *Iowa*—McGregor, 24th, winter wheat and rye, yield enormous; oats lodged; barley fair. In northeastern portion of state not a single field of wheat but what is more or less damaged by either blight, rust, or chinch bugs, 27th. Dubuque Co., wheat crop a failure owing to rust and chinch bugs, 27th. Humboldt Co., oats heading well, corn growing wonderfully; wheat somewhat injured by the hot weather. Scott Co., rye and barley nearly all cut; rye good; barley colored; oats heading well, heavy crop; spring wheat injured by rust and hot weather. Emmet Co., barley fit to cut, oats heavy both in head and straw; wheat very much damaged by hot weather; corn half a crop. Keokuk Co., rye harvested; spring wheat excellent, heads well filled; oats very heavy and in many instances lodged. Butler Co., oats only a fair crop; all crops will be poor owing to blight and rust. Clear Lake, crops suffering greatly from heat and storm; much of the grain is badly rusted, and oats and wheat are flat. Nora Springs, the ground is so wet as to seriously impede harvesting with machines, and the hot weather prevents the grain from filling and blights it very badly. Ft. Madison, 4th, apples ripe. Vail, corn very promising. *Kansas*—Labette Co., wheat yielding from sixteen to twenty-eight bushels per acre. Neosho Co., winter wheat yielding from fifteen to thirty bushels; corn doing well. Elk Co., winter wheat yielding twenty-five bushels; oats all cut; corn better than last season. Chautauqua Co., winter wheat yielding eighteen bushels; corn equal to last year. Butler Co., winter wheat mostly in stack, some threshed, yielding twenty-four bushels; corn far ahead of last year. Cresswell, wheat harvested; timothy ripe. Holton, 31st, wheat harvested and threshed, best crops ever known in this locality; wheat yields from twenty to twenty-six bushels per acre. Independence, 30th, grapes ripe. *Kentucky*—Boyd Co., oat crop very fine, heavy yield; corn fair; potatoes, prospects good; apples show but one-half of a crop, while peaches are a total failure; small fruits in abundance. Carroll Co., oat crop, yield very large of fine heavy grain; corn, prospects very flattering; potatoes show an unusually fine condition;

tobacco very good, topping has begun; rye and hay crops unprecedentedly heavy; fruit on high lands unusually good. Fayette Co., oats excellent; fruit crop very small; apples are not plentiful, and peaches are very scarce; hemp crop promises well. Fleming Co., potatoes, best crop for many years; apples scarce; peaches, plums and pears one-fourth of a crop; tobacco good. Franklin Co., tobacco crop very poor; potatoes promise a heavy yield; oats very heavy, yield large. Garrard Co., apples, very heavy crop, but very few peaches; grapes not good; corn crop never better. Graves Co., apples poor; peach crop very heavy; potatoes, average crop. Hart Co., corn crop, prospects for an extraordinary yield; oat crop, very light, owing to rust; wheat only medium. Harrison Co., heaviest harvest known for years; potatoes excellent; apples, half a crop; peaches, two-thirds of a crop; cherries total failure. Jessamine Co., apples good, but other varieties of fruit an entire failure; corn, prospect flattering. Larue Co., oat crop splendid; potatoes excellent; fruit of all kinds the best for years; rye crop unusually large. Marion Co., corn crop promises to be one of almost unparalleled abundance, fruit crop good, except peaches, which are rotting. Mercer Co., potato crop promises to be unusually heavy. *Massachusetts*—Somerset, harvesting, 5th, rye, 17th, oats; 20th, sweet corn for use. *Maryland*—Fallston, 16th, oats harvested; 1st, timothy cut; ripe, 5th, raspberries, 12th, blackberries, 19th, tomatoes, 26th, sweet corn. *Michigan*—Detroit, crops of all kinds in excellent condition; one of the most favorable seasons for vegetation; wheat considerably above the average in quantity and quality; oats and hay both above the average; corn, average crop; potatoes very good; fruit below the usual yield. *Minnesota*—24th, Hokah, wheat very good. Mound Prairie, 24th, wheat greatly injured by blight and rust. Janesboro, 24th, wheat greatly injured by hot weather. Lake City, 24th, wheat harvesting began, much injured by blight. In southern portion of state wheat much blighted, 27th. Blue Earth Co., the best fields of wheat are lodged, tangled and more or less rusted; barley and oats are all lodged. Meeker Co., rye and barley harvested, crop heavy and good; winter wheat is very heavy; spring wheat rusted on the leaves. *Missouri*—Sage Co., wheat all stacked; no effort made to thresh or sell; oats all cut, very good crop; corn not as good as last year. Oregon, 8th, peaches ripe; ripening, 14th, apples, 17th, tomatoes; blooming, 7th, phlox, 11th, tiger lilies. Springfield, 24th, sweet potatoes, and 30th, grapes in market; 31st, melons ripe; wheat and oats very good; magnificent prospect for corn; fruit in great abundance. *Nebraska*—Boone Co., rye, barley and wheat harvested, prospects very good; oats, very good; no injury to grain from rust. Franklin Co., rye, and barley harvested, rye is an average crop, but barley is very heavy; oats are well headed and promise a large crop; no injury from rust, and no grain lodged; corn never looked better. Clear Creek, harvesting, 5th, barley, poor crop, 15th, wheat. *New Jersey*—Vineland, month very favorable to growth of vegetation; corn, grass, and potatoes in excellent condition. *New Hampshire*—Dunbarton, apples and corn fair; wheat below the average; largest crop of hay for ten years; potatoes damaged by Colorado bugs; 30th, wheat harvest begun. *New York*—12th, in northern portions of the state, wheat plentiful; straw tall but stout; heads full; harvest commenced some weeks early; hay-cutting begun, crop large but much mixed with daisies; potatoes fine; oats heading well, quite heavy; apples, large yield; all crops somewhat injured by a cold snap. Palermo, 9th, corn in tassel; 19th, harvesting oats; ripe, 19th, early apples; 20th, blackberries; 28th, early pears. Kensico, blooming, 4th, chestnut. Wappingers' Falls, 1st, cutting hay; 2nd, sowing buckwheat; blooming, 3rd, morning glories, catnip; 7th, hollyhocks; harvestin', 5th, wheat and rye; 7th, sweet corn topping out; ripe, 15th, early apples and tomatoes; 8th, gooseberries; 9th, blackberries; 8th, corn 2½ feet high, oats in good condition; 11th, apple crop being destroyed by black lice; 15th, field-corn topping out; 19th, corn in silk, cutting oats. Starkey, harvesting, 6th, wheat; 13th, barley; 20th, oats; 16th, threshing wheat; ripe, 18th, blackberries. Vernon Centre, 18th, haying finished; 20th, wheat harvest nearly completed, crop very light; 31st, hops just out of the burr; oat harvest begun, crop fair. *New Brunswick*—11th, spring grains, potatoes, roots and fruits promise abundant harvest. *Nova Scotia*—11th, canker-worm seriously damaged apples and plums. *Ohio*—Allen Co., wheat, an unprecedented crop; oats promise a very heavy yield; corn, prospects good; potatoes, crop will fall short of last year, owing to rot, which has already set in; fruit prospects encouraging. Ashtabula Co., wheat, very heavy yield; oats, heavy yield; grain of superior quality; corn, good crop; potatoes, prospects for a good crop; fruit of all kinds in fine condition. Belmont Co., wheat very good; oats, better quality than last year; potatoes, below average; apples very promising, excellent crop of peaches, pears and plums and great abundance of grapes. Clermont Co., wheat, excellent in quantity and quality; oats, prospects fair; corn, never looked better; potatoes very fine; fruit in the finest condition, except peaches, which are almost a failure. Gallia Co., wheat and oats about the same as last year; corn crop very uneven, prospects poor; potatoes, whole crop in desperate condition, vines dying and dead from bug and drought; fruit, every kind excellent, except peaches. Guernsey Co., fruit never better, except in low lands, where it was injured somewhat by frost. Harrison Co., wheat crop all harvested, largest and best for many years; apples, peaches, cherries and plums are in great abundance, particularly the two former, which is the largest crop in many years. Hancock Co., potatoes a failure, on account of the plant being attacked by a small louse, that destroyed both roots and vines. Highland Co., grapes, very heavy yield; peaches, best yield for many years. Hocking Co., fruit, condition and prospects for all kinds never better, except grapes; there never was such an abundance of all crops in this county. Montgomery Co., wheat crop extraordinary; oats in splendid condition; corn, never in better condition; potatoes growing excellently; an unexampled year for gardening; fruits of all kinds show a great increase. Wyandot Co., apples and peaches immense, other fruits plenty. Putnam Co., wheat crop the largest yield ever known in this locality; corn considerably damaged on bottom-lands; potatoes below average on up-lands, but on prairie lands an immense yield; fruit crop hardly up to average. *Tennessee*—Davidson Co., the sale of wheat is very slow, only about half a crop; oats very good; corn is better than last year; tobacco growing well.

*Texas*—Melissa, weather very favorable to the growth of cotton, prospects of a very large crop; from north to south, throughout the state, all crops look very fine; corn crop as good as ever seen in the state; farmers plowing stubble land. Clarksville, corn crop prospect excellent; cotton far above the average; small fruit abundant. *Virginia*—Broad Oak, 15th, corn in silk; 31st, harvesting oats. grapes ripening. *Wisconsin*—La Crosse, 16th, wheat and oat crop severely reduced by rust, lodging and shrinkage; similar reports from several adjoining counties. Burns, 24th, owing to frequent rains, intense heat, rust, and grubs, spring wheat is badly blighted, oats badly lodged, and hay much damaged. Bangor, 24th, winter wheat good, spring wheat poor, barley and oats lodged, corn partly injured by grubs. West Salem, 24th, wheat poor, from blight, rust and lodging; corn looks well. Arcadia, 24th, wheat injured by rains and heat; corn looks well; oats and rye good; potatoes well; hay much ruined by water. Barron Co., winter wheat and barley nearly ready to cut, average crop; spring wheat, heaviest crop ever raised, if it escapes rust of which there is some danger owing to hot and moist weather. Eau Claire Co., rye and wheat being harvested, very good crop; spring wheat in good condition, heavy growth; oats good; corn not as good as last year. Embarrass, weather very favorable to growth of vegetation, all crops unusually fine.

**MISCELLANEOUS.**—*Locusts*: Olivet, Dak., flying from N. E., 20th and 27th; N. W. 30th. Coalville, Utah, flying N. E., 1st, 9th, 11th, 17th in large numbers, 18th in large numbers, 19th in large numbers; S. E., 6th, 12th, 15th in large numbers, 27th air full of them, 23rd, 25th and 26th in immense numbers; E., 8th, 9th, 12th, 14th in immense numbers, 29th immense swarms, 31st; S., 14th in immense numbers, 27th air full of them. Locusts destroyed nearly all the crops in Summit county, Utah. Salt Lake City, 20th, vast numbers, between 2 and 3 p. m., flying S., against the wind, very few lighted. North Platte, 15th, 1 to 3 p. m., flying NW., in small numbers, but none lighted; 17th and 22nd, flying NW. with the winds. Dodge City, 9th, from 10 a. m. to 3 p. m., small numbers seen at an elevation varying from 200 to 800 feet, flying SW. with the wind. Jacksboro, Texas, 30th, quite a large number have appeared, large size, light yellow and pale green color, came from the N. during preceding night. Winnemucca, Nev., 11th, great numbers made their appearance; 13th, all disappeared; 18th and 19th, large swarms; have not been so numerous for many years. Virginia City, Mont., 25th, flying NW.; 27th, 28th, large numbers, doing some damage to gardens; 30th, disappeared. Pembina, 23rd, in small numbers, a few west of station. *Katydid*s: Hlton, Kan., 13th; Baxter Springs, Kan., 5th; Murphy, N. C., 12th; Webster, N. C., 24th; Ringgold, Ohio, 13th; Jacksonburg, Ohio, 27th. *Crickets*: Ringgold, Ohio, 14th. *Grasshoppers*: Palermo, N. Y., 24th, plenty; Newark, N. J., 14th. *Bobolinks*: Palermo, N. Y., 30th. *Army Cotton Worm*: Virginia Point, near Galveston, Tex., 1st, first appearance this season.

*Meteors*.—Winnemucca, 25th, 26th; Castroville, Tex., 2nd; Davis, Tex., 28th, 30th, 31st; New Orleans, 8th, 9:10 p. m., very brilliant meteor, orange color, motion from W. to E., leaving a trail of about 8°; St. Paul, 29th; Chicago, 6th, large and brilliant meteor at 3:05 a. m., appeared within the constellation, Asia Minor, and disappeared near the horizon a little south of Libra, size of full moon, visible 12 sec., gave light three times the intensity of moon on clear night, left luminous cloud covering entire track, which disappeared gradually from W. to E., lasting 11 sec.; Indianapolis, 6th, at 3:00 a. m. large areolite struck the earth north of the city, leaving brilliant train visible nearly one minute, 27th; Logansport, Ind., 6th; Savannah, Ga., 19th; Fort Whipple, Va., 26th; Vevay, Ind., 31st; Monticello, Ia., 12th; Baxter Springs, Kan., 9th; Holton, Kan., 11th; Cresswell, Kan., 26th; near Woodstock, Md., 17th, 25th, 26th; Fallston, Md., 26th; Rowe, Mass., 28th; Northport, Mich., 25th; Litchfield, Mich., 29th; near Brookhaven, Miss., 23rd, 25th, 29th; near Fayette, Miss., 26th; Corning, Mo., 22nd, 25th; Emerson, Neb., 30th; Clear Creek, Neb., 26th, 29th, 30th; Wappinger's Falls, N. Y., 16th; Aiken, S. C., 31st; near Melissa, Tex., 3rd, 20th; near Dover Mines, Va., 26th; Petersburg, Va., 9th, 3 a. m., brilliant meteor in S. E., altitude 30°, accompanied by a sharp hissing noise for 15 seconds; Austin, Nev., 29th.

*Polar Bands*.—New Corydon, Ind., 1st, 20th, 23rd, 28th; Tabor, Ia., 23rd; Gardiner, Me., 11th, 12th, 18th; near Fayette, Miss., 15th, 16th; Auburn, N. H., 29th; Jacksonburg, Ohio, 17th; Wytheville, Va., 11th, 26th; Burlington, N. H., 29th.

*Zodiacal Light*.—Daytona, Fla., 1st, 2nd, 3rd, 16th to 19th, 21st, 22nd; Monticello, Iowa, 1st.

*Prairie and Forest Fires*.—Creswell, Kan., 19th; Barneget, N. J., 23rd, large fires in pine woods inland; 26th, pine forest on fire in upper Ottawa valley, Canada; 6th, Quebec, Canada, bush-fires in all directions, occasioned by drought, dense smoke in city; 7th, fires continued to spread, smoke on St. Lawrence delayed steamer from Montreal fourteen hours, immense fire back of Three rivers, destroying miles of North Shore railroad track.

*Earthquakes*.—U. S. Naval Hospital, Yokohama, Japan, reports, June 17th, 5:20 a. m., shock of earthquake, duration 40"; 22nd, 12 m., smart shock, duration about 35"; 28th, 6:35 p. m., smart shock. At Tauna, New Hebrides Island, South Pacific, (date not given), "great earthquake, which raised the land along the shore and harbor about 20 feet. Millions of fish were thrown up and destroyed." July 11th, at St. Thomas, W. I., midnight, severe shock of earthquake. 26th, Los Angeles, Cal., 8:25 a. m. slight shock, motion N. to S., lasting one second; San Geronio, Cal., 9:15 a. m., slight shock, direction S. to N., duration about five seconds, house shook and crockery rattled; slight tremor also felt at Cotton, Riverside and San Bernardino; 2nd, Campo, Cal., 5h., 55', 30", two light shocks, from SE. to NW., first shock of 2" duration, second of 3" duration; heavy noise resembling thunder.

*Sunsets.*—The characteristics of the sky, at sunset, as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service Stations. Reports from 120 stations show 3,635 observations to have been made, of which 63 were reported doubtful. Of the remainder 2,991, or 82.3 per cent, were followed by the expected weather.

*U. S. Signal Service Telegraph Lines.*—In illustration of the usefulness of this branch of the service, the following letter is published, viz :

SMITHVILLE, N. C., July 31, 1878.

*Chief Signal Officer of the Army :*

SIR: I have the honor to forward herewith copies of International Code Signals exchanged between this station and the Spanish brig "Dos Cunados," while the latter was ashore and in distress near Caswell Beach, about three miles south of Smithville.

The "Dos Cunados," bound from Wilmington, N. C., to Antwerp, with naval stores, ashore on the bar July 26th, and, getting afloat the following day, drifted into a dangerous shoal close to the beach. She sprung a leak and filled early on the morning of the 29th; discharged cargo and finally got afloat at 6:25 p. m., of the same day. She was towed back to Wilmington for repairs.

The signals were valuable in procuring the aid of tugs and lighters whenever wanted; especially so, because the Captain of the brig was ignorant of the English language.

Very respectfully,

Your obedient servant,

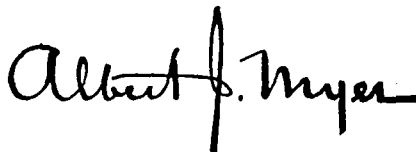
ROBERT SEYBOTH,

*Sergeant, Signal Service, U. S. A.*

The signals exchanged referred to requests from the Captain for lighters and tugs, and the position and condition of his vessel. The facts were at once telegraphed to the Chief Signal Officer, and by him to the wrecking companies and others.

*Sun-spots.*—Prof. Gustavus Hinrichs, Iowa City, Iowa, reports that the sun's disk was examined on sixteen days, and not a spot was seen. Observations were also made at Fort Whipple, Va., on the 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 11th, 13th, 22nd, 23rd, 25th, 26th and 28th, and no spots observed.

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*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer, U. S. A.*

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